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SUMMARY

From the population of general practitioners (GPs) in the city of Groningen and the surrounding area (northern part of the Netherlands) a stratified sample of 25 GPs was drawn. Stratification was with respect to the GP's attitude, measured by questionnaire and ranging from 'clinical' to 'family medicine'. Patients aged 16-65 were judged by the GP at index visit to have (GP+) or have not (GP-) a Mental Health Problem (MHP). If the patient had presented with a MHP in the eleven months preceding the month of the index visit, the patient's history status was called 'old'; with one minor exception it was called 'new' otherwise. At the end of the index visit every patient (n=2237) was handed a General Health Questionnaire (GHQ; 30-item version) which was to be returned to us by mail (response rate 89%). Only gender differentiated slightly between responders and non-responders (males 87%, females 91%).

If the GHQ total score exceeded 4 the patient was called a GHQ case (GHQ+), else a GHQ non-case (GHQ-). From the 'new' patients following samples were drawn (sampling fraction in parentheses): GP+GHQ+ (1.0), GP+GHQ- (1.0), GP-GHQ+ (.23), GP-GHQ- (.07). An additional sample of 42 'old' GP+GHQ+ patients who were known for their complaining behaviour was selected, too. These patients were asked for interview. Refusal rates ranged from 0.12 to 0.54. GHQ total score distributions of those who refused and of those who accepted did not differ. The numbers of patients actually interviewed are (subgroup size in parentheses): 'new' GP+GHQ+ 106 (160); 'new' GP+GHQ- 21 (46); 'new' GP-GHQ+ 80 (397); 'new' GP-GHQ- 49 (847); 'old' complaining GP+GHQ+ 36 (221).

The interview covered psychopathology, social functioning, life events in the past year, and current long term difficulties, and took three hours on the average. Psychopathology was assessed with the Present State Examination (PSE; 9th edition). Reliability of the traditional scoring was satisfactory. Reliability of an added category indicating sub-clinical presence of a symptom was poor. Note that a similar category has been introduced in the tenth edition of the PSE.

Interviewers and the management team were fortunate to have the opportunity to run a pilot study (n=414, of which 43 were interviewed). This has surely helped reduce unreliability of scores and number and type of management errors.

The variables among which relationships are described and analyzed in this thesis are: patient background variables (gender, age, education, marital status, employment status), patients' reasons for encounter (RFE), patients' GHQ scores, GP judgement of the RFEs (MHP or not), patient history status ('new', 'old'), GP attitude (clinical - family medicine), and PSE data. Among the statistical methods used are log-linear analysis, (polytomous) logistic regression, latent trait analysis, factor analysis, and cluster analysis. Results for the other assessments (social functioning etc.) are presented elsewhere.

Quite unexpectedly, the GP's attitude had virtually no explanatory value. There were some unimpressive associations with demographic variables but not with GP-

judgement, history status, or identification of 'cases' defined by either GHQ or PSE.

GP judgement was predicted by history status, type of complaint, and to a minor extent by age. GPs identified MHPs in 56% of 'old' patients and in 14% of 'new' patients. For the GHQ these figures were 66% and 38%, and for the PSE they were at 28% and 10%. Of 'new' patients who were PSE cases, 10% had 'severe depression', 42% 'neurotic depression', 29% 'phobia', 17% 'anxiety state', and 1% 'mania' (ICD-8 nomenclature). Of 'old' GP+GHQ+ patients with 'chronic complaining behaviour' 53% were PSE cases, of which 75% were depressed.

GPs identified 29% of GHQ cases and 56% of PSE cases among 'new' patients, and 61% of GHQ cases and an estimated 76% of PSE cases among 'old' patients. It was suggested that GPs have a tendency to over-identify MHPs in 'old' patients and to under-identify MHPs in 'new' patients. Among 'new' patients, GPs identified 100% of those with 'severe depression', 62% of those with 'neurotic depression', 44% of those with 'phobia', and 35% of those with 'anxiety state'. Of the 10% 'new' patients who were PSE cases 46% suffered from anxiety disorder, 52% from depression, and 1% from 'mania'.

GHQ caseness was associated with type of complaint and history status (three-factor effect): 'new' patients were GHQ-cases more often if they had a psychological RFE, 'old' patients less often so.

PSE-caseness was associated with type of complaint, but not with gender, age, or education. The association with history status could not be evaluated by log-linear analysis due to the design of the study. Disagreement between GP and GHQ could not be attributed to type of complaint but to a combined effect of history status and educational level. An interpretation of this effect was not attempted.

Disagreement between GP and PSE was not associated with any of the variables in the analysis (history status necessarily being excluded by the study design).

The GHQ identified 87% of PSE cases among 'new' patients. Its specificity was 67%. For 'old' patients these numbers were estimated as 95% and 59%. For all patients, the estimates were 91% and 65%. For 'new' patients, 34% of those with 'anxiety state' were identified, 97% of those with 'neurotic depression', and 100% of those with 'phobia' or 'severe depression'. The only patient with 'mania' scored positive, too. Disagreement between GHQ and PSE was not associated with patient characteristics. 'Anxiety state' is the diagnosis most likely to be missed by both GP and GHQ; conversely, virtually all of the 11% PSE-cases among 'new' patients missed by both GP and GHQ suffer from 'anxiety state'.

The GP was slightly better in predicting PSE caseness in 'new' patients than the GHQ. Together they predicted better than each alone, suggesting that the GP uses information, not contained in the GHQ, with additional predictive value. It was suggested that this might be knowledge of the presence of somatic illness. Likelihoods of PSE caseness were 52% for GP+GHQ+, 7% for GP+GHQ-, 13% for GP-GHQ+, and 1% for GP-GHQ-. Type of complaint added significantly to prediction.

The logistic model for the relationship between PSE caseness and GHQ total score given by Henderson .et al. (1979) and Hodiamont and Veling (1984) was supported. It was shown that the alternative scoring method proposed by Goodchild and Duncan-Jones (1985) did not improve prediction. The model was extended to a polytomous logistic model for the relationship between PSE-ID and GHQ total score. Also, a method was presented which makes optimal use of the

information available in a two-stage study for estimating the proportion of cases in the population.

Latent trait analysis of the GHQ revealed the unidimensionality of the latent space. Three tentative Rasch scales were derived, one of four and two of five items. These scales did not measure the same latent trait, however, so this questioned the unidimensionality of the GHQ. Results obtained with the alternative scoring method were corroborated. The increase in dimensionality of the latent space was considered 'to a large extent, but not wholly, artefactual'.

Latent trait analysis of the PSE substantiated previous results (Goldberg et al., 1987) of two latent dimensions (at 45° angles), coined anxiety and depression. Results by Vandenhout and Griez (1984) showing that some CATEGO-syndromes are not well-defined, were duplicated. Results of a cluster analysis technique (MAPCLUS) yielding overlapping clusters were presented and discussed in view of the former results and the anxiety-depression discussion.

Assuming a stable-in-time ratio of 'new' to 'old' patients, a Markov model for the flow of patients in a primary care practice was investigated. The model fitted satisfactorily if it was assumed that a patient is considered 'new' by GPs if she has not been diagnosed with a MHP for for a period of between 2 and 4 months.